

REMARKS

Claims 1-8 are pending in the application. Claims 1-8 stand rejected. Applicants submitted an Amendment and Response on June 11, 2003, to an Office action dated March 13, 2003. The Examiner did not consider the Applicants' arguments to be persuasive, however, and issued substantially the same rejections, as detailed below. Applicants submit this paper to clarify their arguments made June 11, 2003.

Rejections under 35 U.S.C. §102

Claims 1 and 3-5 are rejected under 35 U.S.C. §102 as allegedly being anticipated by U.S. Patent No. 6,307,873 to Geels *et al.* ("Geels"). The Office action asserts on pages 2 and 3 that Geels discloses a diode laser comprising a plurality of semiconductor layers including a top layer with a ridge, a bottom layer, and an intermediate layer, a means for facilitating application of an electric field, the ridge comprising an elongated segment and a flared segment, and all the other stated limitations. Regarding claims 3-5, the Office action asserts on page 3 that Geels discloses all the stated limitations.

Geels teaches a multi-layer optoelectronic device including a pumping pattern of stripes, which are patterned to only partially pump the light beam as it exits from a single mode section and enters a diverging gain section. (Column 8, lines 13-17.) According to Geels, "the region of the diverging gain section adjacent to the single mode section, that initially receives the propagating light from the single mode section, is *patterned to only provide limited pumping* to this region to permit the propagating light to initially spread and fill the diverging limits of the diverging gain section *prior to aggressive gain pumping* of the light." (Column 3, lines 44-50).

[Emphasis added.]

Response dated October 23, 2003

Reply to Office action mailed August 26, 2003

Serial No. 09/822,045

Claim 1 of the instant application recites in part “[a] diode laser comprising ... at least *two opposed grooves* in a surface thereof, *the grooves suppressing only multimode radiation.*”

[Emphasis added.]

In the Amendment and Response dated June 11, 2003, the Applicants argued that in Geels “*the pumping pattern of stripes* suppresses laser gain, i.e., *suppresses both single mode and multimode laser radiation.* In contrast, the *opposed grooves* recited in claim 1 of the present application *suppress multimode radiation only.* Consequently, the opposed grooves of the claimed invention and Geels’s pumping pattern of stripes, which are not opposed, differ both structurally and functionally.”

The Examiner responds that “through partial pumping of the laser beam, the laser beam is not suppressed, but slightly amplified. The laser beam that exits the single mode section is single mode; therefore no multimode radiation is slightly amplified or even amplified, i.e. multimode radiation is suppressed.”

Applicants’ argument does not hinge on whether the Geels device can be said to “*suppress*” radiation, given the evident amplification.¹ The point is simply that there is no *selective suppression of multimode* radiation. The absence of multimode radiation in Geels’s output beam is clearly due, as the Examiner apparently recognizes, to the fact that the laser beam is single mode when it exits single mode section 10A — i.e., *before* it reaches the stripes 27. Accordingly, regardless of whether radiation is or is not suppressed, certainly the *stripes* cannot be responsible for *selectively* suppressing *multimode* radiation, as required by the present claims, since no such radiation *exists* to be suppressed. The Examiner’s conclusion that the absence of

¹ It is noted, however, that reduction of potential gain — i.e., the amplification that would occur in the absence of Geels’s stripes — would seem to qualify as “*suppression*.”

Response dated October 23, 2003

Reply to Office action mailed August 26, 2003

Serial No. 09/822,045

multimode radiation in the output reflects selective suppression is inconsistent with his recognition that the beam originates from a single mode source.

Whether or not Geels's stripes *might* suppress multimode radiation is unknowable and, hence, irrelevant to patentability of the present claims. For anticipation under 35 U.S.C. §102, the cited reference must teach each and every aspect of the claimed invention either explicitly or implicitly. Any feature not directly taught must be inherently present, and to establish inherency, the extrinsic evidence "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Continental Can Co. v. Monsanto Co., 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). No such evidence is apparent in the present case. Accordingly, Applicants respectfully traverse the basis of rejection under 35 U.S.C. §102, and submit that independent claim 1 is allowable because Geels does not teach or suggest opposed grooves that suppress only multimode radiation. Furthermore, Applicants respectfully submit that claims 3-5 are allowable as depending from allowable base claim 1.

Rejection under 35 U.S.C. §103

Claims 2 and 6-8 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Geels. The Office action asserts on page 4 that Geels teaches all the limitation of claims 1 and 3-5, except the bottom layer having a dopant material in the same identical shape as the ridge and the number of grooves etched into the flared segment. The Office action further asserts that Geels teaches that the grooves and its pattern may have many other configurations that are realizable to meet the objectives of the Applicants' invention. Applicants respectfully traverse this rejection.

Response dated October 23, 2003

Reply to Office action mailed August 26, 2003

Serial No. 09/822,045

As recited above, Applicants respectfully submit that Geels does not teach or suggest all the recited limitations of independent claim 1. Accordingly, Applicants respectfully submit that claims 2 and 6-8 are allowable as depending from allowable base claim 1.

CONCLUSION

In view of the above remarks, Applicants submit that all claims are now allowable and respectfully requested withdrawal of the rejections. If the Examiner believes that a telephone conference with Applicants' attorney would be helpful, the Examiner is invited to contact the undersigned at the number below.

Respectfully submitted,



Steven J. Frank
Attorney for Applicants
Testa, Hurwitz, & Thibeault, LLP
125 High Street
Boston, MA 02110

Date: October 23, 2003

Reg. No. 33,497

Tel. No. (617) 310-8108

Fax No. (617) 248-7100

2692408